

REMARKS

Claims 1-21 remain in the referenced application. Claims 22-30 have been canceled.

Regarding the Examiner's restriction requirement dated 19 April 2005, Applicant wishes to point out to that Applicant's Response dated 25 April 2005 was with traverse, not without traverse as asserted by the Examiner in the outstanding Office Action.

Claims 1, 2, and 14 stand rejected under 35 U.S.C. §102(b) by Weber (U.S. Patent No. 6,539,791 B1). Applicant respectfully traverses the above-recited rejection on the basis that Weber, in fact, does not disclose a sensor circuit adapted to cycle a thermistor between a zero-power mode and a self-heated mode.

In rejecting claim 1, the Examiner asserts Weber discloses a bridge circuit 12 that cycles a thermistor 10 between a zero-power mode and a self-heated mode. Applicant respectfully disagrees with this assertion. Referring to column 2, line 61, through column 3, line 15, Weber discloses a bridge circuit 12 connected to a flow sensing thermistor 10 disposed in a flowing medium. Weber further discloses a resistance type heater 22 arranged in the flowing medium adjacent to the thermistor 10, and a pulse generator 24 connected in series with the heater 22 to periodically activate the heater 22. Thus, in operation, the pulse generator 24 pulses the heater 22, thereby activating the heater 22 and heating the flowing medium. The heated flowing medium, in turn, heats the thermistor 10. At the end of the pulse generated by the pulse generator 24, the heater 24 becomes inactive such that the flowing medium cools the thermistor 10. As the thermistor 10 cools, it outputs a signal used to calculate the flow rate of the flowing medium. The bridge circuit 12 maintains a constant voltage as the temperature of the flowing medium changes in order to compensate for temperature fluctuations in the flowing medium and ensure the signal output from the thermistor 10 is solely a function of flow.

Based upon the operation of the flow measuring device as disclosed by Weber and described above, Applicant respectfully submits Weber in no way discloses a sensor circuit adapted to cycle a thermistor between a zero-power mode and a self-heated mode because the thermistor 10 must function solely in the zero-power mode. The thermistor 10 must function solely in the zero-power mode because

the thermistor 10 could not be heated by the flowing medium to accurately reflect flow rate if the thermistor 10 functioned for any length of time in the self-heated mode. Likewise, the thermistor 10 could not be cooled by the flowing medium to accurately reflect flow rate if the thermistor 10 functioned for any length of time in the self-heated mode. The thermistor 10 accordingly functions solely in the zero-power mode and is not in any manner cycled from the zero-power mode to the self-heated mode. The only cycling disclosed by Weber occurs when the pulse generator 24 periodically activates the heater 22 to heat the flowing medium, thereby heating the thermistor 10 to a first elevated temperature. The pulse generator 24 and the heater 22 are located adjacent to the thermistor 10 and thus do not apply any type of control signal to the thermistor 10. The pulse generator 24 controls only the heater 22, which externally heats the thermistor 10 through the flowing medium. The pulse generator 24 consequently does not in any manner cycle the thermistor 10 from the zero-power mode to the self-heated mode. Moreover, the bridge circuit 12 does not cycle the thermistor 10 from the zero-power mode to the self-heated mode. The bridge circuit 12 functions only to compensate for temperature fluctuations in the flowing medium so that the signal output from the thermistor 10 accurately reflects the flow rate of the flowing medium. The bridge circuit 12 accordingly provides only temperature compensation through the establishment of a constant voltage, which does not in any way cycle the thermistor 10 from a zero-power mode to a self-heated mode. Applicant therefore respectfully submits claim 1 is patentable over Weber because Weber discloses only externally heating a thermistor operated in the zero-power mode, which in no way discloses cycling a thermistor from a zero-power mode to a self-heated mode.

In rejecting claim 2, the Examiner asserts the pulse generator 24 cycles the thermistor 10 from a zero-power mode to a self-heated mode. Applicant respectfully disagrees with this assertion. As previously argued, Weber discloses that the pulse generator 24 is connected in series with the heater 22 to periodically activate the heater 22. The pulse generator 24 accordingly is not in any way associated with the thermistor 10. It is therefore impossible for the pulse generator 24 to cycle the thermistor 10 from a zero-power mode to a self-heated mode as asserted by the Examiner. Applicant therefore respectfully submits claim 2 is patentable over Weber because Weber discloses only periodically activating the heater

22 utilizing the pulse generator 24, which in no way discloses cycling a thermistor from a zero-power mode to a self-heated mode.

In rejecting claim 14, the Examiner asserts the constant current source 30 cycles the thermistor 10 from a zero-power mode to a self-heated mode. Applicant respectfully disagrees with this assertion. The constant current source 30 is an example of a device that may be used to implement the control device 14, and the control device 14 functions solely to prevent temperature compensation by the bridge circuit 12 when the heater 22 is activated. The pulse generator 24 deactivates the control device 14 when the heater 22 is activated so that the bridge circuit 12 is deactivated and does not provide temperature compensation. The control device 14, including the implementation with the constant current source 30, merely acts as a switch to activate and deactivate the bridge circuit 12. The control device 14 (i.e., the constant current source 30) accordingly activates and deactivates the bridge circuit 12 to control temperature compensation, which in no way cycles the thermistor 10 from a zero-power mode to a self-heated mode. Applicant therefore respectfully submits claim 14 is patentable over Weber because Weber discloses only activating and deactivating the bridge circuit 12 utilizing the control device 14 (i.e., the constant current source 30), which in no way discloses cycling a thermistor from a zero-power mode to a self-heated mode.

Claims 3-7 stand rejected under 35 U.S.C. §103(a) Weber (U.S. Patent No. 6,539,791 B1) in view of Renger (U.S. Patent No. 5,493,100). Applicant respectfully traverses the above-recited rejection.

In rejecting claim 3, the Examiner asserts Weber discloses a variable resistance as denoted by numeral 22. Numeral 22 in fact denotes a resistance type heater, and Weber is completely silent regarding whether the resistance of the heater 22 is variable. Absent specific disclosure it is improper for the Examiner to assume the resistance of the heater 22 is variable. Applicant accordingly respectfully submits the Examiner's rejection fails at this point because Weber does not disclose a variable resistance. Nevertheless, Applicant further respectfully submits the Examiner's rejection fails because the heater 22 functions to heat the flowing medium and thus does not form any part of a controller for the thermistor 10. Applicant consequently respectfully submits the combination of Weber in view of Renger does not

render claim 3 obvious because Weber does not disclose a variable resistance that forms part of a controller for a thermistor.

Applicant further wishes to comment that the combination of Weber in view of Renger does not render claim 3 obvious because Renger discloses that the thermistor 11 operates only in the self-heated mode. Thus, while the switch 29 includes a constant voltage mode and a constant current mode, it should be understood that each of these modes operates the thermistor 11 in the self-heated mode. This is apparent from column 3, lines 57-61, which states it is desirable not to over heat the thermistor 11, and from column 4, lines 10-14, which states the temperature of thermistor 11 increases. Renger accordingly operates the thermistor 11 only in the self-heated mode. The combination of Weber in view of Renger therefore does not render claim 3 obvious because Renger does not disclose a switch that facilitates the cycling of a thermistor from a zero-power mode to a self-heated mode.

Applicant respectfully submits the combination of Weber in view of Renger does not render claims 4-6 obvious because Weber does not disclose a variable resistance that forms part of a controller for a thermistor.

Applicant respectfully submits the combination of Weber in view of Renger does not render claim 7 obvious based upon the preceding arguments.

The prior made of record in the referenced application has been reviewed by Applicant and is deemed not to anticipate nor render obvious the claimed invention.

In view of the foregoing, Applicant respectfully requests reconsideration of the rejected claims and earnestly solicits early allowance of the application.



Respectfully submitted,

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